

Commissioner for Patents
Page 2

Serial No.: 09/527,584

AMENDMENTS TO THE CLAIMS

This listing of the claims replaces all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS

1. (Currently Amended) A method of managing a logical allocation of resources between connection-oriented traffic and connectionless traffic being routed through a shared physical network element of a communications network, the method comprising the steps of:
 - a) determining a resource requirement of the connection-oriented traffic; and
 - b) dynamically adjusting a respective ~~connectionless~~ traffic metric to be used for routing connectionless traffic based on the determined resource requirement of the connection-oriented traffic; and
 - c) routing the connectionless traffic based on the adjusted traffic metric.thereby providing the logical allocation of resources for connectionless traffic based on the resource requirement of connection-oriented traffic.
2. (Original) A method as claimed in claim 1, wherein the connection-oriented traffic comprises multi-protocol label switched (MPLS) traffic.
3. (Original) A method as claimed in claim 2, wherein the step of determining the resource requirement of the connection-oriented traffic comprises the steps of:
 - a) receiving MPLS reservation requests in respect of the shared physical network element; and
 - b) dynamically adjusting a total amount of resources required to satisfy the received MPLS reservation requests.

Commissioner for Patents
Page 3

Serial No.: 09/527,584

4. (Original) A method as claimed in claim 1, wherein the connectionless traffic comprises internet protocol (IP) packet traffic.
5. (Original) A method as claimed in claim 4, wherein routing of the connectionless traffic is controlled using an interior gateway protocol (IGP) routing system adapted to calculate a shortest path route of the connectionless traffic through the communications network, the shortest path routing being based on a respective metric of each physical network element forming the network.
6. (Original) A method as claimed in claim 5, wherein the step of dynamically adjusting the respective metric comprises the steps of:
 - a) increasing the respective metric as the determined resource requirement of the connection-oriented traffic increases; and
 - b) decreasing the respective metric as the determined resource requirement of the connection-oriented traffic decreases.
7. (Original) A method as claimed in claim 5, wherein the respective metric is a link distance vector associated with a respective link connected to a node of the communications network.
8. (Original) A method as claimed in claim 7, wherein the step of dynamically adjusting the respective metric comprises the steps of:
 - a) determining an updated value of the link distance vector; and
 - b) updating a mapping table maintained by the node with the updated value of the link distance vector.
9. (Original) A method as claimed in claim 8, wherein the step of determining an updated value of the link distance vector comprises a step of querying a resource allocation table comprising a plurality of characteristic resource allocation values

Commissioner for Patents
Page 4

Serial No.: 09/527,584

and a respective link distance vector value corresponding to each characteristic resource allocation value.

10. (Original) A method as claimed in claim 9, wherein the step of querying the resource allocation table comprises the steps of:
 - a) identifying the characteristic resource allocation value which most closely matches the determined resource requirement of the connection-oriented traffic; and
 - b) selecting the corresponding link distance vector as the updated link cost factor.
11. (Original) A method as claimed in claim 5, wherein the respective metric is a link cost factor associated with a respective link connected to a node of the communications network.
12. (Previously Presented) A method as claimed in claim 10, wherein the step of dynamically adjusting the respective metric comprises the steps of:
 - a) determining an updated value of the link cost factor;
 - b) updating a PATH table maintained by the node with the updated link cost factor value; and
 - c) propagating a link state packet containing the updated link cost factor value to neighboring nodes within the network.
13. (Original) A method as claimed in claim 12, wherein the step of determining an updated value of the link cost factor comprises a step of querying a resource allocation table comprising a plurality of characteristic resource allocation values and a respective link cost factor value corresponding to each characteristic resource allocation value.

Commissioner for Patents
Page 5

Serial No.: 09/527,584

14. (Original) A method as claimed in claim 13, wherein the step of querying the resource allocation table comprises the steps of:
- a) identifying the characteristic resource allocation value which most closely matches the determined resource requirement of the connection-oriented traffic; and
 - b) selecting the corresponding link cost factor as the updated link cost factor.
15. (Currently Amended) A shared network element operative within a communications network capable of end-to-end transport of connection-oriented traffic and connectionless traffic through the shared network element, the shared network element comprising:
- a) means for determining a resource requirement of the connection-oriented traffic; and
 - b) means for dynamically adjusting a respective ~~connectionless~~ traffic metric to be used for routing connectionless traffic based on the determined resource requirement of the connection-oriented traffic; and
 - c) means for routing the connectionless traffic through the shared network element based on the adjusted traffic metric.
- thereby providing a logical allocation of resources for connectionless traffic based on the resource requirement of connection-oriented traffic.
16. (Original) A shared network element as claimed in claim 15, wherein the connection-oriented traffic comprises multi-protocol label switched (MPLS) traffic.
17. (Original) A shared network element as claimed in claim 16, wherein the means for determining the resource requirement of the connection-oriented traffic comprises:
- a) means for receiving MPLS reservation requests in respect of the shared physical network element; and

Commissioner for Patents
Page 6

Serial No.: 09/527,584

- b) means for dynamically adjusting a total amount of resources required to satisfy the received MPLS reservation requests.
18. (Original) A shared network element as claimed in claim 15, wherein the connectionless traffic comprises internet protocol (IP) packet traffic.
19. (Original) A shared network element as claimed in claim 18, wherein routing of the connectionless traffic is controlled using an interior gateway protocol (IGP) routing system adapted to calculate a shortest path route of the connectionless traffic through the communications network, the shortest path routing being based on a respective metric of each physical network element forming the network.
20. (Original) A shared network element as claimed in claim 19, wherein the means for dynamically adjusting the respective metric comprises means adapted to:
- a) increase the respective metric as the determined resource requirement of the connection-oriented traffic increases; and
 - b) decrease the respective metric as the determined resource requirement of the connection-oriented traffic decreases.
21. (Original) A shared network element as claimed in claim 19, wherein the respective metric is a link distance vector associated with a respective link connected to a node of the communications network.
22. (Original) A shared network element as claimed in claim 21, wherein the means for dynamically adjusting the respective metric comprises:
- a) means for determining an updated value of the link distance vector; and
 - b) means for updating a mapping table maintained by the shared network element with the updated value of the link distance vector.

Commissioner for Patents
Page 7

Serial No.: 09/527,584

23. (Original) A shared network element as claimed in claim 22, wherein the means for determining an updated value of the link distance vector comprises a resource allocation table comprising a plurality of characteristic resource allocation values and a respective link distance vector value corresponding to each characteristic resource allocation value.
24. (Original) A shared network element as claimed in claim 23, further comprising:
- a) means for identifying the characteristic resource allocation value which most closely matches the determined resource requirement of the connection-oriented traffic; and
 - b) means for selecting the corresponding link distance vector as the updated link cost factor.
25. (Original) A shared network element as claimed in claim 19, wherein the respective metric is a link cost factor associated with a respective link connected to a node of the communications network.
26. (Previously Presented) A shared network element as claimed in claim 25, wherein the means for dynamically adjusting the respective metric comprises:
- a) means for determining an updated value of the link cost factor;
 - b) means for updating a PATH table maintained by the node with the updated link cost factor value; and
 - c) means for propagating a link state packet containing the updated link cost factor value to neighboring nodes within the network.
27. (Original) A shared network element as claimed in claim 26, wherein the means for determining an updated value of the link cost factor comprises a resource allocation table comprising a plurality of characteristic resource allocation values and a

Commissioner for Patents
Page 8

Serial No.: 09/527,584

respective link cost factor value corresponding to each characteristic resource allocation value.

28. (Original) A shared network element as claimed in claim 27, further comprising:
- a) means for identifying the characteristic resource allocation value which most closely matches the determined resource requirement of the connection-oriented traffic; and
 - b) means for selecting the corresponding link cost factor as the updated link cost factor.
29. (Currently Amended) A method of managing a logical allocation of resources between connection-oriented traffic and connectionless traffic being routed through a shared physical network element of a communications network, the method comprising the steps of:
- a) in response to a change in resources allocated to a multi-protocol label switched (MPLS) path through the shared physical network element, determining an updated total amount of resources of the shared physical network element allocated to connection-oriented traffic; and
 - b) dynamically adjusting a respective updated ~~connectionless~~ traffic metric of the shared physical network element based on the updated total resources allocated to the connection-oriented traffic; and
 - c) routing the connectionless traffic based on the adjusted traffic metric.
30. (Currently Amended) A shared network element operative within a communications network capable of end-to-end transport of connection-oriented traffic and connectionless traffic through the shared network element, the shared network element comprising:

Commissioner for Patents
Page 9

Serial No.: 09/527,584

- a) means responsive to a change in resources allocated to a multi-protocol label switched (MPLS) path through the shared physical network element for determining an updated total amount of resources of the shared physical network element allocated to connection-oriented traffic; and
- b) means for determining an updated ~~connectionless~~ traffic metric to be used for routing connectionless traffic based on the updated total resources allocated to the connection-oriented traffic; and
- c) means for routing the connectionless traffic based on the adjusted traffic metric.